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EXAMINER	
OBERLY, ERIC T	

ART UNIT	PAPER NUMBER
2184	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/572,934	WITTMER, DETLEV	
	Examiner	Art Unit	
	ERIC T. OBERLY	2184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 October 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 7 and 8, the term "Explosion-barrier" is indefinite because its intended representation is not clearly presented by the claim language. Claim 11 further defines elements comprised by the Explosion-barrier; the Examiner suggests including similar limitations into independent claims 7 and 8 to provide clarification to the term Explosion-barrier.

Furthermore in regards to claim 7, the amendments to claim 7 states "connecting the storage medium via an interface that serves as an Explosion-barrier" and "transferring the measurement data to the computer unit via a standard interface provided at the computer unit", the claim language is indefinite because relationship between the two interfaces is not distinctly claimed. The amendments appear present an additional interface not present in the original claims, and the relationship between the interfaces is unclear from the presented claim language.

Claims 9 and 10 are rejected due to dependence on claim 7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Behrens et al. (US Patent # 6037857), hereinafter referred to as Behrens.

Referring to claim 8, Behrens teaches a method for safe data transfer between an intrinsically safe sensor (col. 1, lines 29-31) and a non-intrinsically safe computer unit (Industrial Controller; col. 1, line 15)), comprising the steps of: converting analog measured values into digital measurement data in a sensor-module of the sensor (col. 7, lines 35-37); transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path (isolator 48 provides galvanic isolation; Fig. 3, col. 5, lines 60-62), and further to a calibration unit (processor; col. 7, lines 40-41); transferring the measurement data from the calibration unit to an interface (penetration circuit; col. 8, line 50), which is embodied as an Explosion-barrier (intrinsically safe penetration circuit; col. 8, lines 50-52); and transferring the measurement data from the interface to the computer unit via a standard interface provided at the computer unit (col. 3, lines 35-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behrens in view of Mancini et al. (US Patent # 6583982), hereinafter referred to as Mancini.

Referring to claim 7, Behrens teaches method for safe data transfer between an intrinsically safe sensor (col. 1, lines 29-31) and a non-intrinsically safe computer unit (Industrial Controller; col. 1, line 15), comprising the steps of: converting analog measured values into digital measurement data in a sensor-module of the sensor (col. 7, lines 35-37); transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path (isolator 48 provides galvanic isolation; Fig. 3, col. 5, lines 60-62), and further to a calibration unit (processor; col. 7, lines 40-41);

Behrens does not appear to explicitly disclose saving the measurement data to a portable storage medium which is separable from the calibration unit; transporting the storage medium in a separated state to the computer unit; connecting the storage medium via an interface that serves as an Explosion-barrier with the computer unit; and transferring the measurement data to the computer unit via a standard interface provided at the computer unit.

However, Mancini discloses saving the measurement data (data collected) to a portable storage medium (core computer) which is separable from the calibration unit (col. 3, lines 46-50); transporting the storage medium in a separated state to the computer unit (col. 3, lines 34-35); connecting the storage medium via an interface that serves as an Explosion-barrier (NOTE: the core modules universal interface port (UIP)

106, in combination with the enclosures UIP serve as an Explosion-barrier, and for connecting with the laptop/desktop unit) with the computer unit (col. 3, lines 35-36); and transferring the measurement data to the computer unit via a standard interface provided at the computer unit (col. 3, lines 36-38).

Behrens and Mancini are analogous art because they are from the same field of endeavor, intrinsically safe data collection and transmission.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Behrens and Mancini before him or her, to modify the industrial controller system of Behrens to include the removable computer core of Mancini so that data may be safely collected and removed for use in a non-intrinsically safe environment

Behrens suggests a circumstance in which the entire industrial controller is contained inside a hazardous area (see Behrens, Fig. 2, col. 5, lines 40-46), a person having ordinary skill in the art would be motivated to provide a removable storage medium such as the core computer of Mancini so that data collected within the hazardous area maybe safely removed for use in a non hazardous area.

Therefore, it would have been obvious to combine Behrens with Mancini to obtain the invention as specified in the instant claim.

Referring to claim 11, Behrens teaches method for safe data transfer between an intrinsically safe sensor (col. 1, lines 29-31) and a non-intrinsically safe computer unit (Industrial Controller; col. 1, line 15), comprising the steps of: converting analog

measured values into digital measurement data in a sensor-module of the sensor (col. 7, lines 35-37); and transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path (isolator 48 provides galvanic isolation; Fig. 3, col. 5, lines 60-62).

While Behrens discloses connectors forming an Explosion-barrier, providing a galvanic separation, which occurs either optically, capacitively or inductively for connecting a intrinsically safe module to a non-intrinsically safe module (isolators 48, 58, and 60...the galvanic isolator may be simply series capacitances, one for each conductor however inductive (transformer) type isolation may also be used as well as optical type isolators. The galvanic isolator 96 provides the signals to a second connector 94 which may connect to a backplane 52 attached to a non-intrinsically safe module 14"; col. 10, lines 22-27), Behrens does not appear to explicitly disclose transferring the data further to a plug-in module of the computer unit, with the plug-in module comprising an Explosion-barrier.

However, Mancini discloses transferring the data further to a plug-in module of the computer unit (col. 3, lines 46-50), with the plug-in module comprising an Explosion-barrier (all electrical elements within the enclosure case 100 are shielded from the ambient environments such that the presence of ignitable gases and/or vapors will not pose a risk of explosion; col. 4, lines 59-62).

Behrens and Mancini are analogous art because they are from the same field of endeavor, intrinsically safe data collection and transmission.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Behrens and Mancini before him or her, to modify the industrial controller system of Behrens to communicate via the galvanic isolator with the plug-in computer core of Mancini so that data maybe safely collected and removed for use in a non-intrinsically safe environment.

Behrens suggests a circumstance in which the entire industrial controller is contained inside a hazardous area (see Behrens, Fig. 2, col. 5, lines 40-46), a person having ordinary skill in the art would be motivated to provide a plug-in module such as the core computer of Mancini so that data collected within the hazardous area maybe safely removed for use in a non hazardous area.

Therefore, it would have been obvious to combine Behrens with Mancini to obtain the invention as specified in the instant claim.

Referring to claim 13, Behrens teaches a method for safe data transfer between an intrinsically safe sensor (col. 1, lines 29-31) and a non-intrinsically safe computer unit

(Industrial Controller; col. 1, line 15), comprising the steps of: converting analog measured values into digital measurement data in a sensor-module of the sensor (col. 7, lines 35-37); and transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path (isolator 48 provides galvanic isolation; Fig. 3, col. 5, lines 60-62).

While Behrens discloses connectors providing a galvanic separation, which occurs either optically, capacitively or inductively for connecting a intrinsically safe module to a non-intrinsically safe module (isolators 48, 58, and 60...the galvanic isolator may be simply series capacitances, one for each conductor however inductive (transformer) type isolation may also be used as well as optical type isolators. The galvanic isolator 96 provides the signals to a second connector 94 which may connect to a backplane 52 attached to a non-intrinsically safe module 14"; col. 10, lines 22-27), Behrens does not appear to explicitly disclose transferring the data further to a plug-in module of the computer unit, wherein the plug-in module is intrinsically safe.

However, Mancini discloses transferring the data further to a plug-in module of the computer unit (col. 3, lines 46-50), with the plug-in module is intrinsically safe (all electrical elements within the enclosure case 100 are shielded from the ambient environments such that the presence of ignitable gases and/or vapors will not pose a risk of explosion; col. 4, lines 59-62).

Behrens and Mancini are analogous art because they are from the same field of endeavor, intrinsically safe data collection and transmission.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Behrens and Mancini before him or her, to modify the industrial controller system of Behrens to communicate via the galvanic isolator with the plug-in computer core of Mancini so that data maybe safely collected and removed for use in a non-intrinsically safe environment.

Behrens suggests a circumstance in which the entire industrial controller is contained inside a hazardous area (see Behrens, Fig. 2, col. 5, lines 40-46), a person having ordinary skill in the art would be motivated to provide a plug-in module such as the core computer of Mancini so that data collected within the hazardous area maybe safely removed for use in a non hazardous area.

Therefore, it would have been obvious to combine Behrens with Mancini to obtain the invention as specified in the instant claim.

Claims 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behrens in view of Mancini as applied to claims 7, 11 and 13

above, and further in view of Barros De Almeida et al. (US Patent # 6839790), hereinafter referred to as Barros De Almeida.

As to claim 9, Behrens in view of Mancini does not appear to explicitly disclose the standard interface at the computer unit is a USB-interface.

However, Barros De Almeida teaches the standard interface at the computer unit is a USB-interface (a host having a Universal Serial Bus (USB) port; col. 4, line 9).

Behrens, Mancini and Barros De Almeida are analogous art because they are from the same field of intrinsically safe data collection.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Behrens in view of Mancini and Barros De Almeida before him or her, to use a computer unit with an USB interface as taught by Barros De Almeida.

Behrens anticipates a serial network port (see Behrens; col. 3, line 38); a person having ordinary skill in the art would be motivated to incorporate a USB interface because it has become an industry standard in serial interfaces.

Therefore, it would have been obvious to combine Behrens in view of Mancini with Barros De Almeida to obtain the invention as specified in the instant claim.

As to claim 10, Behrens in view of Mancini does not appear to explicitly disclose the data transfer between the sensor and the calibration unit occurs with a proprietary protocol in accordance with the RS485 standard.

However, Barros De Almeida teaches data transfer between the sensor and the calibration unit occurs with a proprietary protocol in accordance with the RS485 standard (col. 5, lines 44-46).

Behrens, Mancini and Barros De Almeida are analogous art because they are from the same field of intrinsically safe data collection.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Behrens in view of Mancini and Barros De Almeida before him or her, to transmit signals between field components in accordance with RS485 as taught by Barros De Almeida.

Behrens anticipates an intrinsically safe serial communication employing a high data rate suitable for the control of many control points within a hazardous area (see Behrens; col. 9, lines 50-55); a person having ordinary skill in the art would be motivated use a protocol in accordance with RS485 as taught by Barros De Almeida as RS485 is a well known serial communication standard which offers high data transmission speeds.

Therefore, it would have been obvious to combine Behrens in view of Mancini with Barros De Almeida to obtain the invention as specified in the instant claim.

As to claim 12, Behrens in view of Mancini does not appear to explicitly disclose the plug-in module is a PCMCIA plug-in card.

However, Barros De Almeida teaches the plug-in module is a PCMCIA plug-in card (col. 1, lines 65-67).

Behrens, Mancini and Barros De Almeida are analogous art because they are from the same field of intrinsically safe data collection.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Behrens in view of Mancini and Barros De Almeida before him or her, implement the plug-in core computer as taught by Behrens in view of Mancini as a PCMCIA connection as taught by Barros De Almeida as background in the field of the art.

Mancini discusses the concept of transferable computer cores as a module containing some essential components of a computer, but lacking any usable interface (see Mancini; col. 1, lines 50-56); as PCMCIA cards, also commonly known as PC Cards, are widely used in the computer industry since their creation in 1991, a person having ordinary skill in the art would be motivated to use such a common standard to implement the transferable core computer as described by Mancini.

Therefore, it would have been obvious to combine Behrens in view of Mancini with Barros De Almeida to obtain the invention as specified in the instant claim.

Response to Arguments

Applicant's arguments filed 10/7/2009 have been fully considered but they are not persuasive.

With respect to the rejection of independent claim 8 under 35 USC on 102(b), the Applicant submits:

> "Behrens does not disclose "transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path". Isolator 48 mentioned by

the examiner connects the whole I/0 rack 24' with an external control terminal. It does not provide a connection between a sensor-module and a sensor-module head. Furthermore, data transferred from an I/0 module to processor 16' according to Fig. 3 of Behrens is not transmitted via isolator 48."

The Examiner respectfully disagrees, with respect to Figures 2 and 3, the control points 36 (sensor) transfers data to the I/O modules 26' (sensor head) of the I/O rack 24', the I/O rack and its transfer paths are galvanically decoupled from the non-intrinsically safe power 44 by isolator 48. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a connection between a sensor-module and a sensor-module head) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the relevant data (digital measurement data) is transmitted from the input through isolator 60 onto data lines 56 and ultimately to processor '16 (further to a calibration unit).

With respect to the rejection of independent claim 7 under 35 USC on 103(a), the Applicant submits:

"With respect to the claim rejections based on § 103: Claim 7 has been amended to include the method step "connecting the storage medium via an interface that serves as an Explosion-barrier with the computer unit". This is an important feature that is neither taught by the Behrens reference nor by the Mancini et al reference... during the time the core computer module connected to the laptop or desktop, an electrostatic charge could occur within the core computer module, since the connection between the core computer module and the laptop or desktop is not

intrinsically safe. For this reason, the core computer module can not simply be brought back into an intrinsically safe environment again.

However, when the storage medium is connected with a computer unit via an interface that serves as an Explosion-barrier, as claimed in amended claim 7, the electrostatic charging of the storage medium is avoided, so that it can be safely brought back into the intrinsically safe environment and so be used repeatedly for data transfer between the intrinsically safe sensor and the non-intrinsically safe computer unit."

The Examiner respectfully disagrees, the computer core module in combination with the enclosure is intrinsically safe, the combination can be removed and returned to the hazardous, outside the hazardous area, the computer core module (storage medium) is transported "in a separated state" and connected to a desktop/laptop (computer unit). Furthermore, the Applicant is arguments are based on hypothetical scenarios which are not clearly reflected in the Applicant's claim language, the Applicant should avoid mere allegations and focus arguments toward specifically pointing out how the language of the claims patentably distinguishes them from the references.

In regards to the Applicant's remarks with respect to claims 11 and 13, the amendments have been fully considered, however do not appear to overcome the prior art applied, as reflected in the rejections above. The Applicant's arguments with respect to claims 11 and 13 do not appear to present any issues beyond those addressed with respect to claim 7, therefore the Examiner's response is the same.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC T. OBERLY whose telephone number is (571)272-6991. The examiner can normally be reached on Monday - Friday 7:30 - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Henry Tsai can be reached on (571) 272-4176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. T. O./
Examiner, Art Unit 2184

/Henry W.H. Tsai/
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